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MACARTHUR, VICTOR L

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* MORGAN KANFLOD, FREDRIK OBERG,  
and BERTIL STENBERG

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Appeal 2009-006604  
Application 10/539,148  
Technology Center 3600

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Before RICHARD TORCZON, SALLY C. MEDLEY and  
MICHAEL P. TIERNEY, *Administrative Patent Judges*.

MEDLEY, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

## STATEMENT OF THE CASE

Atlas Copco Rock Drills AB (“Atlas”), the real party in interest, seeks review under 35 U.S.C. § 134(a) of a Final Rejection of claim 1. We have jurisdiction under 35 U.S.C. § 6(b). We REVERSE and enter a new ground of rejection.

## BACKGROUND

Atlas discloses, referring to Atlas’ figure 2 below [numbers from figure 1 inserted], a coupling sleeve for coupling a threaded rock bolt [1] to a rock drilling machine [2]. The coupling sleeve includes internal threads (not numbered) and a locking device [7]. Spec. ¶¶ 1, 6.

Atlas’ figure 1 is below:

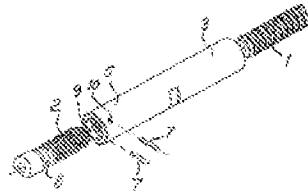


Figure 1 depicts a coupling sleeve, a bolt and drilling machine.

Claim 1 is illustrative:

Coupling sleeve connecting a threaded rock bolt (1) to an impact rock drilling machine (2), said coupling sleeve comprising a first part (3) provided with an internal thread (4) for connection of the rock bolt (1), and a second part (5) provided with an internal thread (6) for connection of the rock drilling machine (2), characterized in that the second part (5) comprises a locking device (7) arranged substantially transversely to a longitudinal axis (9) of the coupling sleeve, said locking device cooperating with a region (8) on the rock drilling machine (2) for preventing separation of the coupling sleeve and the rock drilling machine (2), wherein percussion energy is transmitted from the rock drilling machine to the rock bolt during a percussion operation when the locking device is unloaded, and said locking device retains the rock drilling machine connected to the coupling sleeve when said rock bolt

is disconnected from said coupling sleeve by rotation of said rock drilling machine in a direction for disconnecting said first part of said coupling sleeve from said rock bolt for reinforcing a rock with said rock bolt.

The Examiner relies on the following prior art references:

Sanderson	1,994,792	Mar. 19, 1935
Ponto	1,701,985	Feb. 12, 1929

Atlas appeals the following rejections:

1. Claim 1 under 35 U.S.C. § 102(b) as anticipated by Sanderson;
2. Claim 1 under 35 U.S.C. § 102(b) as anticipated by Ponto; and
3. Claim 1 under 35 U.S.C. § 103(a) as unpatentable over Sanderson and Ponto.

### ISSUE

Has Atlas shown that the Examiner incorrectly found that Sanderson, Ponto or the combination of Sanderson and Ponto describe a coupling sleeve and a locking device that cooperates with a region on a drilling machine, such that the locking device is unloaded during a percussion operation but retains the drilling machine connected to the coupling sleeve when a bolt is disconnected from the coupling sleeve?

### FINDINGS OF FACT

#### Sanderson

1. Sanderson describes, referring to Sanderson's figure 2 below [numbers from figure 2 inserted], a drill tool including a rope socket [2] secured by a threaded stud [3] to an upper end of a drill tool body [1] and a cutting tip [4] secured to the lower end of the drill tool body [1] by a pair of threaded studs [5]. P. 2, col. 1, ll. 13-18, 34-39, 58-75.

Sanderson's figure 2 is below:

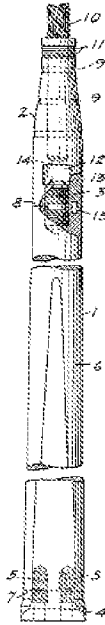


Figure 2 depicts a drill tool.

2. Dowel [15] prevents loosening of the rope socket [2] from the drill tool body [1] due to relative movement between the socket [2] and body [1]. P. 2, col. 1, ll. 55-58.
3. Sanderson depicts the dowel [15] arranged transverse to the longitudinal axis of the drill tool body [1] and cooperating with the threaded stud [3] of the rope socket [2].
4. The rope socket connection is particularly strong so as to remain secure for all types of service. P. 2, col. 2, ll. 63-66.

Ponto

5. Ponto describes, referring to Ponto's figure 2 below [numbers from figure 2 inserted], sucker rods [1], [2], [3], [4] including threaded pins [5], [6] screwed into a box [7] and a coupling sleeve [11] fitted over box [7]. LL. 34-50.

Ponto's figure 2 is below:

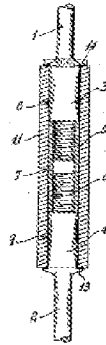


Figure 2 depicts two sucker rods coupled together.

6. The lock is provided so that the sucker rods can not unscrew. LL. 7-9.
7. Locking pin [14] is provided to prevent upward movement of the sleeve [11]. LL. 54-55.
8. The joint may be uncoupled by removing the pin [14] and sleeve [11]. LL. 10-11, 59-61.

### ANALYSIS

The Examiner finds that the claim recitation “wherein percussion energy is transmitted from the rock drilling machine to the rock bolt during a percussion operation when the locking device is unloaded, and said locking device retains the rock drilling machine connected to the coupling sleeve when said rock bolt is disconnected from said coupling sleeve by rotation of said rock drilling machine . . .” is functional and that Sanderson and Ponto each describe structure that is inherently capable of performing the claimed function. Ans. 3-8, 10.

Atlas argues that the structural arrangement and cooperation of the components and coupling sleeve defined by claim 1 requires the locking device to be: 1) unloaded (unlocked) when percussion energy is transmitted from the drilling machine to the bolt; and 2) loaded (locked) when the drill is rotated in a direction for disconnecting the bolt from the coupling sleeve.

App. Br. 8-9, 11; Reply Br. 2. Atlas argues that neither Sanderson's nor Ponto's components are structurally arranged or cooperate in the manner claimed, but rather cooperate to operate in the opposite manner, e.g., that both their locking devices are loaded during drilling (operation). App. Br. 8-10, 13-14; Reply Br. 3-4, citing Sanderson p. 2, ll. 13-18, 55-61 and Ponto p. 1, ll. 45-50, 54-55.

Claim 1 requires cooperation between the coupling sleeve and the drilling machine such that the locking device is unloaded when percussion energy is transmitted to the bolt during percussion operations, and the locking device retains the drilling machine connection to the coupling sleeve (i.e., is loaded) when the bolt is disconnected from the sleeve by rotation of the drilling machine in a direction for disconnection.

Based on the record before us, the Examiner has failed to establish that either Sanderson or Ponto anticipate claim 1. Sanderson's described elements do not cooperate to function as claimed. Sanderson's dowel [15] is loaded during drilling operations so as to prevent loosening of rope socket member [2] from tool body [1] during drilling operations. P. 2, col. 1, ll. 55-58, col. 2, ll. 63-66. Ponto's described elements also do not cooperate to function as claimed. Ponto's locking pin [14] is loaded during drilling operations so as to prevent upward movement of the sleeve [11] and unscrewing of the sucker rods [1], [2], [3], [4]. LL. 1-10, 45-55. We have considered the Examiner's rationale that either Sanderson's or Ponto's described elements are inherently capable of performing the claimed function. The Examiner's rationale is not persuasive because it narrowly focuses on whether the functional claim language implies a particular structure that is distinguishable over the prior art structure. As in this case,

functional language can also implicitly require a particular arrangement or cooperation of the claimed structure that is necessary for performing that function.

In determining that claim 1 would have been obvious over Ponto in view of Sanderson, the Examiner again finds that Ponto describes the claimed structure that is inherently capable of performing the claimed function. Ans. 6-8, 13-15. As applied by the Examiner, the combination of Ponto and Sanderson does not overcome the noted deficiencies of Ponto.

For all these reasons, we do not sustain the rejections of claim 1 as anticipated by Sanderson, anticipated by Ponto, and obvious over Ponto in view of Sanderson. Nonetheless, the claimed invention would have been obvious over the prior art of record, and accordingly we enter a new ground of rejection.

#### NEW GROUND OF REJECTION

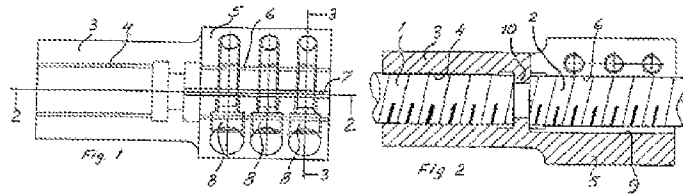
Claim 1 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Arvidsson<sup>2</sup> (WO 02/057591) in view of Sanderson. Arvidsson describes, referring to Arvidsson's figures 1 and 2 below [numbers from figures 1 and 2 inserted], a coupling sleeve comprising a first part [3] with an internal thread [4] for connection of a bolt [1], a second part [5] with an internal thread [6] for connection of a drilling machine [2] and a clamping means [8] arranged transversely to the coupling sleeve longitudinal axis and cooperating with a region on the drilling machine [2]. ¶ 5.

Arvidsson's figures 1 and 2 are below:

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<sup>2</sup> Arvidsson, published 25 July 2002, was cited in Atlas' Information Disclosure Statement filed 16 June 2005.





Figures 1 and 2 depict a coupling sleeve.

Arvidsson further describes that percussion energy is transmitted from the drilling machine [2] to the bolt [1] during a percussion operation when the clamping means [8] is unloaded, and the clamping means [8] retains the drilling machine [2] connected to the coupling sleeve when the bolt [1] is disconnected from the coupling sleeve by rotation of the drilling machine [2]. ¶ 5. Arvidsson's also describes that the joint which should be more difficult to loosen by means of a mechanical joint (i.e., clamping means [8]) is prevented from loosening when the drilling machine and bolt are separated. ¶ 3. However, Arvidsson does not describe a locking device.

Sanderson describes a drill tool including a drill tool body [1] connected to a rope socket [2] by a threaded stud [3] on one end and connected to a tip [4] by a pair of threaded studs [4] on the other end of the drill tool body [1]. P. 2, col. 1, ll. 13-18, 34-39, 58-75. A locking device in the form of a dowel [15] is arranged transversely to the longitudinal axis of the drill tool body [1] and cooperates with a portion of the socket [2] (i.e., the threaded stud [3]). Fig. 2. The dowel [15] prevents loosening of the socket [2] from the body [1] due to relative movement therebetween. P. 2, col. 1, ll. 55-58.

It would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Arvidsson's coupling sleeve by substituting a dowel as taught by Sanderson for the clamping means since both are known for preventing the loosening of a joint. The predictable

result of the substitution would be the prevention of loosening of Arvidsson's drilling machine [2] from the coupling sleeve. When a structure already known in the prior art is altered by the substitution of one element for another known in the field, the combination is obvious when it does no more than yield a predictable result. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

#### DECISION

We REVERSE the rejection of claim 1 under 35 U.S.C. § 102(b) as anticipated by Sanderson.

We REVERSE the rejection of claim 1 under 35 U.S.C. § 102(b) as anticipated by Ponto.

We REVERSE the rejection of claim 1 under 35 U.S.C. § 103(a) as unpatentable over Sanderson and Ponto.

We ENTER a new ground of rejection for claim 1.

#### TIME PERIOD

This decision contains new grounds of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review." 37 C.F.R. § 41.50(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution*. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .

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(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

ORDER

REVERSED

New Grounds of Rejection - 37 C.F.R. § 41.50(b)

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